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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/675,162

Applicant(s)

MITCHELL ET AL.

Examiner

Wutchung Chu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/30/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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DETAILED ACTION

Specification

1. information under "RELATED APPLICATIONS" needs to be updated.

Claim Objections

2. Claims 19-22 and 25-27 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Claims 19-22, 25, 26 depend from independent claim 1, a VPN converter, but are directed towards a server (claim 19-22), a method (claim 25), and a node (claim 26), respectively. Claim 27 depends from independent claim 23, which is a method claim, but is directed towards software. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 27-29 are rejected under 35 U.S.C. 101.

Regarding claim 27, the claim is directed towards software and thus is mere functional descriptive language. Software fails to fall into one of the four statutory classes of invention: process, machine, manufacture, or composition of matter.

Regarding claims 28-29, the claims are directed toward a sequence of signals. A sequence of signals fails to fall into one of the four statutory classes of invention: process, machine, manufacture, or composition of matter.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 25, it is unclear what subject matter is being claimed as claim 25 is a method claim, but fails to recite any steps.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 3-5, 8-11, 13-16, 18-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Somasundaram (US2006/0013209).

Regarding claim 1, Somasundaram discloses a system for handling shared services through virtual route forwarding (VRF) (**see paragraph 10**) comprising:

interfaces for interfacing two or more VPNs (**see figure 1 box 104 service provider edge bos including router/ NAT device and paragraph 28 line 3-4 where interfaces INT1 through INT4 are each coupled to a private domain**) to an external network or networks (**see figure 1 box 108 and paragraph 28 line 20 public domain**), arranged to receive information relating to a communication session between an entity in any of the VPNs and the external network or networks and to convert a format of the information (**see paragraph 35 and figure 4**).

Regarding claim 3, Somasundaram teaches the communication session being one of: a data session (**see paragraph 38 line 6-9 a packet is sent**), a telephony call, a video call, and a fax communication.

Regarding claim 4, Somasundaram teaches arranged to convert a transmission format of the information.

Regarding claim 5, Somasundaram teaches the transmission format being one of IP (**see paragraph 34 line 3 and figure 3**), ATM (**see paragraph 46 line 10**), MPLS (**see paragraph 34 line 3 and figure 3**) and TDM formats.

Regarding claim 8, Somasundaram teaches arranged to convert between different versions of the IP protocol (**see paragraph 27 line 11-12**).

Regarding claim 9, Somasundaram teaches arranged to interface communication sessions having one end in one of the VPNs and another end in the external network (**see figure 1 box 104 service provider edge box int1 to private domain and int 5 to shared service network**).

Regarding claim 10, Somasundaram teaches arranged to return to the entity a destination address which lies in a selected address space of the respective VPN for bearer packets of the communication session being set up in response to a control indication for this communication session from the call server (**see paragraph 35 line 1-14 and figure 4 box 412 “outside” public address**).

Regarding claim 11, Somasundaram teaches the converter being arranged to associate signals related to the communication session being set up in the external network, and the destination address for the communication session being set up (**see paragraph 35 line 1-14 and figure 4 box 410 “outside” local address**).

Regarding claim 13, Somasundaram teaches arranged to determine which of the VPNs the information relates to, and associate VPN converter resources to a communication session associated to the identified VPN (**see paragraph 34 line 1-10 and figure 3 box 302 IP header, 310 MPLS tag**).

Regarding claim 14, Somasundaram teaches determination of the VPN identity is based on an external network address associated to the VPN entity (**see paragraph 35 line 1-14 and figure 4 box 412 “outside” public address**).

Regarding claim 15, Somasundaram teaches determination of the VPN identity is based on a VPN identifier parameter provided by an entity of the VPN (**see paragraph 35 line 1-14 and figure 4 box 406 “inside” local address**).

Regarding claim 16, Somasundaram teaches determination of the VPN identity is based on parameters associated with establishment of the communication session (**see paragraph 34 line 1-6 and figure 3 box 312 provider edge device identifier**).

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Regarding claim 18, Somasundaram teaches having a number of interface ports each corresponding to a different one of the VPNs, and the determination of the VPN identity is based on which of the interface ports is used for the communication session. **(see figure 1 box 104 where INT1 and INT3 corresponds to VPN1, and INT2-4 each corresponds to a different VPN and paragraph 28 line 1-18).**

Regarding claim 19, Somasundaram teaches a server for controlling a communication session between an entity of any of multiple VPNs and an external network or networks **(see figure 4 and paragraph 34)** via the converter **(see figure 1 box 104 service provider edge box including router/NAT device)**, the server being arranged to determine which of the VPNs is related to the communication session **(see paragraph 35 line 1-5)**, and to cooperate with the converter to use the identity of the VPN in controlling how the communication session is handled by the converter **(See paragraph 35 and figure 4).**

Regarding claim 20, Somasundaram teaches being a call server located in the external network **(see paragraph 34 line 1 service provider; it is inherent for a service provider to include a server)**, and the communication sessions comprising calls **(see paragraph 26 line 5 voice gatekeepers which it is inherent to comprise calls).**

Regarding claim 21, Somasundaram teaches arranged to cooperate with the entity to determine the identity of the VPN **(see paragraph 35 line 1-14).**

Regarding claim 22, Somasundaram teaches arranged to determine the identity of the VPN based on an external network address associated to the VPN entity **(see**

paragraph 35 line 1-14 and figure 4 box 412 “outside” public address).

Regarding claim 23, Somasundaram discloses all the limitations as discussed in the rejection of system claims 1 and is therefore method claim 23 is rejected with using the same rationales.

Regarding claim 24, Somasundaram teaches having the steps of passing a request for a communication session (**see paragraph 34 line 1-10**) from the entity to a call server external to the VPN, determining which of the VPNs the entity belongs to, and using the identity of the VPN in the converter to route the information (**see paragraph 38 line 1-9**).

Regarding claim 25, Somasundaram teaches a method of offering a virtual private network service over the converter (**see paragraph 26 line 6**).

Regarding claim 26, Somasundaram teaches a node for a network, the node having a converter (**see figure 1 box 104 service provider edge box including router/NAT device**).

Regarding claim 27, Somasundaram teaches software for carrying out the method (**see paragraph 44 line 1-8**).

Regarding claim 28, Somasundaram teaches a sequence of signals to and from a VPN converter having interfaces for interfacing two or more VPNs (**see figure 1 box 104 service provider edge box including router/ NAT device and paragraph 28 line 3-4 where interfaces INT1through INT4 are each coupled to a private domain**)to an external network or networks (**see figure 1 box 108 and paragraph 28 line 20 public domain**), the external network or networks having a different data format

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to those of the VPNs (**see paragraph 34 1-10**), the VPN converter being arranged to convert the data format of information relating to a communication session between an entity in any of the VPNs and the external network or networks (**see paragraph 34 line 8-20 and paragraph 381-9**), the sequence comprising a signal from the entity of one of the VPNs (**see paragraph 34 line 8-9**), addressed to an entity in the external network which appears to have an address within an address range of the respective VPN, and a signal returned from the external network, converted by the VPN converter and routed by the VPN converter back towards the entity in the respective VPN (**see paragraph 35 line 1-14 and figure 4 box 410 "outside" local address**).

Regarding claim 29, Somasundaram teaches further comprising a signal from the VPN converter to a call server containing an identity of the respective VPN (**see paragraph figure 3 box 314 VPN identifier**).

Claim Rejections - 35 USC § 103

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Somasundaram in view of Munoz et al. (US6741585).

Regarding claim 2, Somasundaram discloses all the subject matter of the claimed invention with the exception of using arranged to cooperate with a call server in the external network to effect the communication session.

Munoz et al. from the same or similar fields of endeavor teaches location server **(see Munoz et al. column 6 line 10 and column 3 line 38 – column 4 line 31)**. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to include location server as taught by Munoz et al. in the system for handling shared services through virtual route forwarding (VRF) in order to provide call control and services.

11. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Somasundaram in view of Young et al (US2003/0093563).

Regarding claim 6 and 7, Somasundaram discloses all the subject matter of the claimed invention with the exception of using an encoding format being one of G.711, G.729, and G.726. Young et al. from the same or similar fields of endeavor teaches the supporting CODECs include G.711 and G.729 **(see Young et al paragraph 91 line 6)**. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to include supporting CODECs include G.711 and G.729 as taught by Young et al. in the system for handling shared services through virtual route forwarding (VRF) in order to provide different encoding format of call services.

12. Claims 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Somasundaram in view of Munoz et al. (US6741585).

Regarding claim 12, Somasundaram discloses all the subject matter of the claimed invention with the exception of using the signals relating to a TDM slot of a trunk, and an IP address allocated to the communication session in the form of a call. Munoz et al. from the same or similar fields of endeavor teaches the TDM interface **(see Munoz et al. column 9 line 11-25 and line 46-65)** and PSTN/ATM interworking **(see Munoz et al. column 8 line 20-53)**. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to include TDM interface and PSTN/ATM interworking as taught by Munoz et al. in the system for handling shared services through virtual route forwarding (VRF) in order to provide interworking capabilities between different networks **(see Munoz et al. column 1 line 56 – column 2 line 7)**.

13. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Somasundaram in view of Munoz et al. (US6741585).

Regarding claim 17, Somasundaram discloses all the subject matter of the claimed invention with the exception of using the parameters comprise an E.164 address. Munoz et al. from the same or similar fields of endeavor teaches the translation from E.164 addresses to IP address of gateways **(see Munoz et al. column 6 line 11-12 and column 15 line 54-column 16 line 32)**. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to include translation from E.164 addresses to IP address of gateways as taught by Munoz

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et al. in the system for handling shared services through virtual route forwarding (VRF) in order to provide interworking capabilities between different networks (**see Munoz et al. column 1 line 56 – column 2 line 7**).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bradd et al. (US2003/0118002) discloses a methods and apparatus for setting up telephony connections between two address domains having overlapping address ranges.

Ould-brahim et al. (2003/0177221) discloses a resource allocation using a n auto-discovery mechanise for provider-provisioned layer-2 and layer-3 virtual private networks.

Forslow (US7155518) discloses extranet workgroup formation across multiple mobile virtual Private networks.

Arrow et al. (US6226751) discloses method and apparatus for configuring a virtual private network.

Boden et al. (US7107614) discloses system and method for network address translation intergration with IP security.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wutchung Chu whose telephone number is 571 270 1411. The examiner can normally be reached on Monday - Friday 1000 - 1500EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571 272 7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WC
Wutchung Chu

A handwritten signature in black ink, appearing to read 'Wing Chan', with a stylized flourish at the end.

WING CHAN
SUPERVISORY PATENT EXAMINER